

AMENDMENTS TO CLAIMS

4. (Currently Amended) A traveling-wave amplifier, comprising:

an output transmission line including first, second, third, and fourth drain lines;

an input transmission line including first, and second gate lines;

a first FET having a drain terminal connected between said first and second drain lines and a gate terminal connected to said first gate line;

a second FET having a drain terminal connected between said third and fourth drain lines and a gate terminal connected between said first and second gate lines;

a first additional capacitance connected between said second and third drain lines;

and

a second additional capacitance connected to the fourth drain line,

wherein said first and second capacitances are arranged to match phase velocities of signals in said input transmission line with phase velocities of signals in said output transmission line and thereby improve gain characteristics by improving gain flatness and maximizing bandwidth of the amplifier relative to an amplifier in which phase velocities are unmatched, and

wherein:

L_d is a distance between said drain terminals of the first and second FETs,

$(1-x)L_d$, $0 < x < 1$, is a length of said first and third drain lines,

xL_d , $0 < x < 1$, is a length of said second and fourth drain lines,

said first additional capacitance is located a distance xL_d from the drain terminal of said first FET and a distance $(1-x)L_d$ from the drain terminal of said second FET, and

said second additional capacitance is located a distance xL_d from the drain terminal of said second FET.

5. (Canceled)

6. (Currently Amended) A traveling-wave amplifier as claimed in claim ~~5~~ 4, wherein $x = 0.5$.